

2014 GWPC Annual Forum *PRELIMINARY AGENDA...*

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Ground Water Protection Council

ANNUAL FORUM

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Washington State Convention Center – October 5-8, 2014 – Seattle, Washington

Groundwater Sustainability



...a critical component of the ecosystem



The GWPC provides a forum for stakeholder communication and research exchange to improve governments' role in the protection and conservation of groundwater.

Ground Water Protection Council • 13308 N. MacArthur Blvd., Oklahoma City, OK 73142, • 405 516 4972 • www.gwpc.org •

PRELIMINARY AGENDA... The following is NOT final and will be modified as we get closer to the event

Saturday, October 4			
1:00-5:00			
State Oil & Gas Regulatory Exchange Induced Seismicity Working Group (workgroup members only)			
Sunday, October 5			
Registration opens at 7:00am			
8:30-12:00		8:30-12:00	
Induced Seismicity Technical Session (Open session details TBA) Abstract __: Worldwide Seismic Activity and Earthquake Activity in Oklahoma Glen Brown, Continental Resources, Inc. Abstract __: Assessing and Communicating Relative Risk of Induced Seismicity by Oil and Natural Gas Development – Bill Rish, Hull Risk Analysis Center		GWPC ASR & Aquifer Exemption Working Group (State workgroup members only)	
1:00-5:40		1:30-5:40	1:30-5:40
Groundwater Training 		Board of Directors Meeting	Professional Development Training 
Mike Wireman – National Groundwater Expert (formerly EPA R-8) 1:00-3:30 Basic Principles of Groundwater Occurrence and Flow What is groundwater? Hydrologic cycle Geology and groundwater Groundwater hydrology Groundwater –surface water interaction Groundwater quality 4:00-5:40 Transport and Fate of Contaminants in Groundwater Natural groundwater chemistry What is meant by transport and fate? Controls on contaminant transport and fate Chemical, physical, biological processes that control transport & fate Contaminant plumes Contaminant transformation Groundwater microbiology			Best practices in risk communication of water related risks. (this 2 hour segment will be repeated on Wednesday afternoon) Todd Norton, Washington State University Jason Sampson, Washington University Module I: When water becomes a human health threat. Categorizing contaminants Mapping contaminants, vectors, and exposures. Discussion of infographic for public information. Module II: Social dynamics impacting human behavior in persistent/non-persistent, organic/synthesized, and toxins/non-toxins. Module III: Communicating water risk to publics Assessing and Communicating Relative Risk of Hydraulic Fracturing by Oil and Natural Gas Development – Bill Rish, Hull Risk Analysis Center Abstract 19: NETL's Variable Grid Method Tool for Simultaneous Visualization and Assessment of Spatial Trends and Uncertainty - Jennifer R. Bauer and Kelly Rose, National Energy Technology Laboratory
6:00-7:30 pm			
2014 GWPC Annual Forum Welcome Reception			

Major Funding Provided by:



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Acknowledgements: Event Sponsors and Contributors

Thank you for caring about Groundwater!

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Monday, October 6

Morning Reception 7:00 – 9:20

8:00-9:20

Nutrients in Groundwater

Abstract 5: Nitrogen Dynamics at a Manured Grass Field Overlying the Sumas-Blaine Aquifer in Northwest Washington - **Barbara M. Carey**, Washington State Department of Ecology.

Abstract 6: Nitrates in Nebraska groundwater and a small town's plight to avoid treatment - **Ryan Chapman**, Nebraska Department of Environmental Quality

Abstract 15: The Washington Nitrate Prioritization Project - **Laurie Morgan**, Washington State Dept. of Ecology

Abstract 18: Is It Working?: Lysimeter Monitoring in the Southern Willamette Valley Groundwater Management Area **Susanna L. Pearlstein**, University of Arizona

8:00-9:20

**Oil Gas Produced Water Management
for Beneficial Use**

**Spotlight
series**

The oil and gas industry is not only in the energy production business, they are also in the WATER management business. GWPC advocates the BEST and most efficient management of this precious natural resource for beneficial use if not utilized now, managed for the future.

The Oil and Gas industry manages a vast quantity of produced water now. Unfortunately there are often barriers including technical, economic, storage/location, regulatory, etc. that prevent the most beneficial use or management of produced water.

Abstract _: Observations and Thoughts on Produced Water Management - **John Veil** – Veil Environmental, LLC

Abstract _: Permian Basin Water Reuse and Surface Water Supplies - **David Holt**, Permian Basin Petroleum Association

9:20-9:30 Break

9:30-11:00

NRWA/GWPC Session

USDA – Rural Utility Services Forum: New Funding Opportunities

9:30-11:00

**Oil Gas Produced Water Management for Beneficial
Use (cont.)**

9:30-11:00

**EPA Revised Aquifer Exemption
Implementation**

-EPA Staff

11:10-1:20 Opening Session and Luncheon: *Groundwater Sustainability... a critical component of the ecosystem*
Federal Groundwater Initiatives Panel

Moderator **Leslie Savage**, Chief Geologist, Railroad Commission of Texas, and GWPC President

Peter Grevatt, Director Office of Ground Water and Drinking Water, Environmental Protection Agency

Nancy Johnson, Environmental Science and Policy Analyst, United States Department of Energy

Bill Cunningham, USGS Chief of the Office of Groundwater, United States Geological Survey

Chris Carlson, National Groundwater Team Lead, USDA Forest Service

Lunch Presenter **Clarita Lefthand-Begay**, Navajo Nation

Ground Water Research & Education Foundation
**Spotlight
series**

*Select sessions are part of the Spotlight Series...
...the technology transfer initiative of the
Ground Water Research & Education Foundation*

GROUNDWATER
RESEARCH & EDUCATION FOUNDATION

Monday, October 6	
1:40-3:20 Groundwater Management and Sustainability Abstract ____: Chris Carlson, National Groundwater Team Lead, USDA Forest Service Abstract 24: Keeping the Pump Primed: Aquifer Sustainability - John Jansen , Cardno Enrix (40 min) Abstract 1: A Groundwater Balancing Act: Using the Groundwater Requirements of Wetlands to Set Limits to Groundwater Alteration - Allison Aldous , The Nature Conservancy, Portland, OR. & Christopher Carlson , USDA Forest Service Abstract 7: Alabama Groundwater Sustainability: A Strong Scientific Foundation for Water Resource Management and Policy to Secure Alabama's Water Future - Marlon R. Cook , Geological Survey of Alabama	1:40-3:20 Oil and Gas Environmental Workshop Introduction and Overview of the Course: Paul Jehn , GWPC EPA's Study of the Potential Impacts of Hydraulic Fracturing for Oil & Gas on Drinking Water Resources - Ramona Trovato , Acting Principal Deputy Assistant Administrator, USEPA Office of Research and Development Pre and Post Drill Sampling, Monitoring, and Interpretation of Results - Paul Jehn , GWPC State Baseline Water Quality Programs for Oil & Gas Operations- Bob Puls , Oklahoma Water Survey State and Local Regulations for Pre and Post Drill Monitoring - Kate Konschnik , Harvard Law
3:20-3:40 Break	
3:40-6:00 Water Sustainability (cont.) Abstract ____: NGWA Informational Resources: Defining Managed Aquifer Recharge and Best Suggested Practices for Aquifer Storage and Recovery - William Alley , Ph.D., National Ground Water Association and Steven P. Musick , P.G., Ground Water Protection Council Abstract ____: ASR & Agriculture: How Washington Farmers are Moving to Smarter Water Solutions – Tuck Russell , Winery Owner Abstract 34: Can the Ogallala Aquifer Sustain Long Term Ground Water Production? Jay Lazarus , PhD, Glorieta Geoscience, Inc. Abstract 9: Conceptual Model for the Kitsap Peninsula, Kitsap, Mason, and Pierce Counties, Washington Wendy Welch , USGS, Washington Water Science Center <i>Enhancing Sustainability by Characterizing New Resources</i> Abstract 3: Using Oil and Gas Data to Find Groundwater Supplies Patricia Billingsley and Madeline Dillner , Oklahoma Corporation Commission Abstract 2: Characterization of Deep Groundwater, William M. Alley , NGWA	3:40-6:00 Oil and Gas Environmental Workshop (cont.) A Review and Comparison of the Methods and Variables within the Methods Used for the Investigation of Dissolved Gas Concentrations - Charles J. Neslund , Eurofins Lancaster Laboratories Environmental, LLC. The Use of Strontium Isotope and Element Geochemistry to Characterize Water from Fossil Fuel Sources - Liz Chapman , PhD., ECHELON Applied Geosciences

*The Place to go for Hydraulic
Fracturing Information*



www.FracFocus.org

Tuesday, October 7	
Morning Reception 7:30-10:00	
<p>8:00-9:40 State / Federal / Tribal Roundtable (governmental officials only)</p> <p>NEW Groundwater Initiatives - State, Federal, Tribal</p> <ul style="list-style-type: none"> • Groundwater sustainability • Groundwater regulatory development • Groundwater research • Groundwater awareness 	<p>Oil and Gas Environmental Workshop Stray Gas Migration – Preparedness & Incident Response™ Fred Baldassare, Echelon Applied Geosciences & Debby Yost, Chesapeake Energy Recent Research, Regulatory & Policy Initiatives Physical/chemical properties of methane & light gases</p> <ul style="list-style-type: none"> • Gas phase • Dissolved phase <p>Sampling for dissolved and gas phase methane</p> <ul style="list-style-type: none"> • Establishing baseline • Methane: natural variability vs. anthropogenic impact • Protocol for dissolved phase & gas phase sampling • Evaluation of field and laboratory methane data • Isotope sampling protocol
9:40-10:00 Break	
<p>10:00-11:40 Groundwater Availability, Sustainability, & Water Planning</p> <p>Abstract 33: Overview of National Climate Assessment Development Advisory Committee - Paul Fleming, Seattle Public Utilities' Climate Resiliency Program</p> <p>Can the Ogallala Aquifer Sustain Long Term Ground Water Production? Jay Lazarus, Jim Riesterer, P.G., and Elke Naumburg, PhD Giorieta Geoscience, Inc.</p> <p>Sustainable Water Management in Massachusetts – Duane LeVangie, Water Management Program Chief, MA DEP</p> <p>Abstract: Hydraulic Fracturing and Water Tracking – Thom Kerr</p> <p>State Groundwater Resource Evaluation Status – Discussion Session... what do we know and what do we need to know regarding groundwater quality and planning for the future</p>	<p>Stray Gas Migration – Preparedness & Incident Response™ (cont.) General Chemistry Parameters</p> <ul style="list-style-type: none"> • Pre-drill & post drill • Potential impacts to groundwater geochemistry <p>Stray Gas Migration Response Protocol – Site Investigation/demonstration</p> <ul style="list-style-type: none"> • Methodology to determine threat level • Geological setting • Stray gas case studies <p>Measures to protect public health & safety</p> <ul style="list-style-type: none"> • Interim remedial measures • Long-term remedial measures <p>Principles and design</p>
<p>Lunch on your own 11:40-1:00</p>	

Tuesday, October 7

1:00-2:20 Water Quality and Quantity

Private Water Well

Abstract 14: Communicating Water Well Stewardship to Elicit Effective Behaviors
Kevin B. McCray, National Ground Water Association

Abstract 22: PrivateWellClass.org – An Online Technical Assistance Program for Private Well Owners **Steven D. Wilson**, Illinois State Water Survey

Abstract ____: Private Well Sampling Near Oil and Gas Operations - **Bob Puls**, Oklahoma Water Survey

Abstract 32: Texas Well Owner Network: Protecting Groundwater Resources and Human Health - **Drew Gholson**, Texas A&M AgriLife Extension Service

1:00-2:20 Oil and Gas Environmental Workshop (cont.)

Well Integrity: Stray Gas Wellbore Intrusion Analysis

J. Daniel Arthur, P.E., SPEC & Tom Tomastik, P.G., ALL Consulting

Well Integrity & Gas Intrusion

Regulatory Considerations

- State-Specific Requirements
- Variations Among States
- Useful References
- Others Considerations
- Drilling Method issues

Air

Mud Rotary

Adequate vs. Failed Cement

2:20-2:40 Break

2:40-5:20 Water Quality

Groundwater Monitoring

Abstract 35: Development and Implementation of National Ground Water Monitoring Network - **Mike Wireman**, Sub-Committee on Groundwater, U.S. EPA, retired

Abstract 4: Wyoming Groundwater-Quality Monitoring Network
Gregory K. Boughton, Wyoming-Montana Water Science Center of the USGS

Abstract 16: The Kentucky Interagency Groundwater Monitoring Network: Expanded Monitoring Programs **Jessica Moore**, Kentucky Division of Water

Abstract 10: Required Baseline and Ongoing Monitoring of Groundwater in CBM Areas of Colorado – Use in Case Studies of Possible Impacts to Groundwater. **Peter Gintautas**, Colorado Oil and Gas Conservation Commission

Groundwater Protection

Abstract ____: How do States Define "Usable Quality" Groundwater?
- **Steven P. Musick**, Ground Water Protection Council

Abstract 8: Hunting Big Brine: How the Oklahoma Corporation Commission is using Historical Aerial Photographs to Protect Oklahoma Waters **Madeline Dillner**, Oklahoma Corporation Commission

2:40-5:20

Well Integrity: Stray Gas Wellbore Intrusion Analysis (cont.)

Well Integrity Analysis

- Using Holistic Analysis
- Well Records Analysis
- Timeline Analysis
- Well Site Safety
- Vent Rate Testing Methods
- Pressure Testing & Analysis
- Well Logging Method
- Other Methods

Wellbore Remediation

- Developing an Approach
- Remedial Design
- Remedial Considerations
- Remedial Methods
- Remedial Products

Summary and Conclusions

2:40-4:40

Training Session

Abstract 19: NETL's Variable Grid Method Tool for Simultaneous Visualization and Assessment of Spatial Trends and Uncertainty
- **Jennifer R. Bauer and Kelly Rose**, National Energy Technology Laboratory

Wednesday, October 8

Morning Reception 7:00-10:20

8:00-10:00 EPA Source Water Session

Session Goal: Share new and forthcoming tools to help states and others use data and collaboration to protect drinking water sources and respond to critical opportunities to improve source water protection

- Overview of Tools for Source Water Protection - **Holly Green**, Acting Branch Chief, Prevention Branch, EPA OGWDW

New and Forthcoming Tools

- DWMAPS: EPA developing new GIS tool to update/improve source water assessments and plans - **Sherri Comerford**, Prevention Branch, and **Rachel Carlson**, ORISE Intern, Prevention Branch, EPA OGWDW
- Source Water Collaborative "How-to Collaborate Toolkit": Connect with key partners to implement priority source water protection actions - **Rachel Carlson**, ORISE Intern, Prevention Branch, EPA OGWDW
- Tools for emergency notification, mitigation, and resiliency measures- **Rachel Carlson**, ORISE Intern, Prevention Branch, EPA OGWDW
- Brief overview of resources developed by EPA's Water Security Division. Discussion may include tools for contaminant fate and transport, natural disaster preparation, and notifying nearby utilities of a potential source water contamination incident.

8:00-10:00 Unconventional Oil and Gas Water Management

Abstract __: Oil & Gas Industry's Impact on Rural Water Systems – **Ken Royle**, Bartlett and West Inc.

Abstract __: Regulatory and Infrastructure Challenges – **Heather Palmer**, Bracewell & Giuliani.

Abstract 26: Water Use by Sector: An Analysis of FracFocus and USGS Water Use Data **Mike Nickolaus**, GWPC

Abstract 23: Shale Energy Produced Fluids Management and UIC Well Disposal Trends **David Yoxtheimer**, P.G. Associate with Penn State University

Panel Discussion: Developing Water and Oil & Gas Sector Partnerships

Abstract 27: Panel discussion by state regulators, water system managers and oil and gas industry representatives Developing Water and Oil & Gas Sector Partnerships

10:00-10:20 Break

10:20-12:40 Source Water Protection

Abstract __: NGWA/ANSI Water Well Construction Standard, **Kevin B. McCray**, National Ground Water Association

Abstract 29: Collaborative Approaches to Source Water Protection Plan and Stormwater MS4 Implementation - **Matt Genchur**, Pennsylvania Rural Water Association (PRWA).

Abstract 17: Kentucky's Source Water Protection Assistance Program
Jessica Moore, Kentucky Division of Water

Onsite and Decentralized Septic Systems – BMPs for Source Water Protection

Abstract 21: Sustainability is the Name of the Game – EPA's Decentralized Wastewater Program Efforts' **Maureen Tooke**, Environmental Protection Specialist

10:20-12:40 Unconventional Oil and Gas Water Management

Abstract 28: Disposal Wells and Shale Resource Development: A National Perspective **J. Daniel Arthur**, ALL Consulting

An Evaluation of Fracture Growth and Gas/Fluid Migration as Horizontal Marcellus Shale Gas Wells are Hydraulically Fractured in Greene County, Pennsylvania - **Richard Hammack**, Office of Research and Development, NETL-DOE

Abstract 20: Comparative Databases for Water Quality and Quantity Regulations Pertaining to Oil and Gas Development **Matt Samelson**, University of Colorado

Abstract 11: Huerfano County Colorado Stray Gas Incident Response and Monitoring **Peter Gintautas**, Colorado Oil and Gas Conservation Commission

Abstract 13: Virtual Hydraulic Fracturing Site **Richard Haut**, HARC

Event Registration Information *Open*

Conference Rates:

On or before October 5th : Full Conference - \$525

After October 5th : Full Conference - \$580

Presenter Discount Rate - \$195

One Day Rate - \$275

Register at www.gwpc.org/events

Hotel Registration Information *Open*

The Paramount Hotel

724 Pine St, Seattle, WA 98101

"GWPC Annual Forum" Room Block

Conference Room Rate: \$152 with Gov ID

Reservations: 206-292-9500 group code is GWPC

Registration, Sessions and Events will be held next door at the Washington State Convention Center

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